LISTING OF THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

1-39 (Canceled)

40. (New) A separating material formed by a process comprising the steps of:

a) providing a solid substrate having a substrate surface, wherein primary or secondary amines are coupled to the substrate surface; and

b) forming a graft polymer on the substrate by a process consisting essentially of the reaction steps of:

i) covalently coupling the primary or secondary amines with a thermally labile radical initiator and

ii) contacting the substrate surface with a solution of one or more polymerizable monomers, wherein thermally initiated graft copolymerization of the monomers forms a structure comprising adjacent functional polymer chains on the substrate surface.

41. (New) The separating material of claim 40, wherein the step of covalently coupling the primary or secondary amines with a thermally labile radical initiator is followed by at least one washing or rinsing step prior to contacting the substrate surface with a solution of one or more polymerizable monomers.

42. (New) The separating material of claim 40, wherein the solid substrate is a porous polymeric material having a pore size sufficiently large to allow passage of blood, blood plasma, or blood serum through the solid substrate.

43. (New) The separating material of claim 40 or 42, wherein the solid substrate is selected from the group consisting of: a membrane, a particle bed, a fibre mat, and beads.

44. (New) The separating material of claim 40, wherein the solid substrate comprises a biocompatible material.

45. (New) The separating material of claim 40, wherein the solid substrate comprises a material selected from the group consisting of polyacrylates, polystyrene, polyethylene oxide, cellulose, cellulose derivatives, polyethersulfone (PES), polypropylene (PP), polysulfone (PSU), polymethylmethacrylate (PMMA), polycarbonate (PC),

polyacrylonitrile (PAN), polyamide (PA), polytetrafluorethylene (PTFE), cellulose acetate (CA), regenerated cellulose, and blends or copolymers of the foregoing, or blends or copolymers with hydrophilizing polymers.

46. (New) The separating material of claim 40, wherein the amino-functional groups are primary amino groups.

47. (New) The separating material of claim 40, wherein the thermally labile radical initiator comprises at least one carboxylic group.

48. (New) The separating material of claim 40, wherein the thermally labile radical initiator comprises compounds which decompose to give free radicals upon thermal activation selected from the group consisting of azo compounds and peroxides.

49. (New) The separating material of claim 40, wherein the thermally labile radical initiator is 4,4'-azobis-(4-cyanovaleric acid) or 2,2'-azobis-[N-(2-carboxyethyl)-2-methylpropionamidine].

50. (New) The separating material of claim 40, wherein the polymerizable monomers are selected from the group consisting of compounds having a polymerizable double bond.

51. (New) The separating material of claim 40, wherein the one or more polymerizable monomers are selected from the group consisting of:

acrylic acid, methacrylic acid, vinyl compounds, derivatives of acrylic acid, methacrylic acid and vinyl compounds, N,N-Dimethylaminoethyl acrylamide, N,N-Diethylaminoethyl acrylamide, N,N-Dimethylaminopropyl acrylamide (DMPA), N,N-Dimethylaminopropyl methacrylamide, N,N-Dimethylaminoethyl methacrylate, N,N-Diethylaminoethyl methacrylate, N,N-Dimethylaminoethyl acrylate, N-Morpholinoethyl acrylate, N-Morpholinoethyl methacrylate, 1-Vinylimidazole, Trimethylammoniumethyl acrylamide, Trimethylammoniumpropyl methacrylamide, Trimethylammoniumethyl methacrylate, Glycidyl acrylate, Glycidyl methacrylate, Vinyl glycidyl ether, Vinyl glycidyl urethane, 2-Hydroxyethyl methacrylate, 2-Hydroxypropyl methacrylate, Hydroxymethyl methacrylate, N-Vinylpyrrolidone, 2-Vinyl pyridine, 4-Vinyl pyridine, and N-Vinyl-2-methylimidazole.

52. (New) The separating material of claim 40, wherein the one or more polymerizable monomers comprise Dimethylaminopropyl acrylamide (DMPA).

53. (New) The separating material of claim 40, wherein the one or more polymerizable monomers are selected from the group consisting of compounds of the following formula:

$H_2C=C(R^1)-C(O)-X-R^2-N(R^3)_2$,

wherein R^1 is hydrogen, methyl or ethyl group; R^2 is a C_1-C_6-alkyl or aryl group; R^3 is a methyl or ethyl group; and X is NH or O.

54. (New) A method for producing a separating material comprising the steps of:

a) providing a solid substrate having a substrate surface, wherein primary or secondary amines are coupled to the substrate surface; and

b) forming a graft polymer on the substrate by a process consisting essentially of the reaction steps of:

i) covalently coupling the primary or secondary amines with a thermally labile radical initiator and

ii) contacting the substrate surface with a solution of one or more polymerizable monomers, wherein thermally initiated graft copolymerization of the monomers forms a structure comprising adjacent functional polymer chains on the substrate surface.

55. (New) The method of claim 54, wherein the solid substrate is a porous polymeric material having a pore size sufficiently large to allow passage of blood, blood plasma, or blood serum through the solid substrate.

56. (New) The method of claim 54, wherein the solid substrate is selected from the group consisting of: a membrane, a particle bed, a fibre mat, and beads.

57. (New) The method of claim 54, wherein the solid substrate comprises a biocompatible material.

58. (New) The method of claim 54, wherein the solid substrate comprises a material selected from the group consisting of polyacrylates, polystyrene, polyethylene oxide, cellulose, cellulose derivatives, polyethersulfone (PES), polypropylene (PP), polysulfone (PSU), polymethylmethacrylate (PMMA), polycarbonate (PC), polyacrylonitrile (PAN), polyamide (PA), polytetrafluorethylene (PTFE), cellulose acetate (CA), regenerated cellulose, and blends or copolymers of the foregoing, or blends or copolymers with hydrophilizing polymers.

59. (New) The method of claim 54, wherein the amino-functional groups are primary amino groups.

60. (New) The method of claim 54, wherein the thermally labile radical initiator comprises at least one carboxylic group.

61. (New) The method of claim 54, wherein the thermally labile radical initiator comprises compounds which decompose to give free radicals upon thermal activation selected from the group consisting of azo compounds and peroxides.

62. (New) The method of claim 54, wherein the thermally labile radical initiator is 4,4'-azobis-(4-cyanovaleric acid) or 2,2'-azobis-[N-(2-carboxyethyl)-2-methylpropionamide].

63. (New) The method of claim 54, wherein the one or more polymerizable monomers are selected from compounds having a polymerizable double bond.

64. (New) The method of claim 54, wherein the one or more polymerizable monomers are selected from the group consisting of:

acrylic acid, methacrylic acid, vinyl compounds, derivatives of acrylic acid, methacrylic acid and vinyl compounds, N,N-Dimethylaminoethyl acrylamide, N,N-Diethylaminoethyl acrylamide, N,N-Dimethylaminopropyl acrylamide (DMPA), N,N-Dimethylaminopropyl methacrylamide, N,N-Dimethylaminoethyl methacrylate, N,N-Diethylaminoethyl methacrylate, N,N-Dimethylaminoethyl acrylate, N-Morpholinoethyl acrylate, N-Morpholinoethyl methacrylate, 1-Vinylimidazole, Trimethylammoniumethyl acrylamide, Trimethylammoniumpropyl methacrylamide, Trimethylammoniumethyl methacrylate, Glycidyl acrylate, Glycidyl methacrylate, Vinyl glycidyl ether, Vinyl glycidyl urethane, 2-Hydroxyethyl methacrylate, 2-Hydroxypropyl methacrylate, Hydroxymethyl methacrylate, N-Vinylpyrrolidone, 2-Vinyl pyridine, 4-Vinyl pyridine, and N-Vinyl-2-methylimidazole.

65. (New) The method of claim 54, wherein the one or more polymerizable monomers comprise Dimethylaminopropyl acrylamide (DMPA).

66. (New) The method of claim 54, wherein the one or more polymerizable monomers are selected from compounds of the following formula:

$$H_2C=C(R^1)\text{-}C(O)\text{-}X\text{-}R^2\text{-}N(R^3)_2,$$

wherein R^1 is hydrogen, methyl or ethyl group; R^2 is a C_1-C_6-alkyl or aryl group; R^3 is a methyl or ethyl group; and X is NH or O.

67. (New) Use of a separating material of claim 40 for the extracorporeal treatment of blood, blood plasma or blood serum.

68. (New) The use of claim 67, wherein the use is for the extracorporeal removal of endotoxins from blood, plasma or serum of septic patients.

69. (New) Use of a separating material of claim 40, wherein the use is for affinity adsorption, ion-exchange adsorption, hydrophobic adsorption, hydrophilic adsorption, or affinity adsorption applications.

70. (New) A separating column comprising the separating material of claim 40, whereby the separating material comprises beads, said beads being packed into the separating column, and the beads having a size sufficient to provide a porosity allowing passage of blood cells through the separating column.

71. (New) A separating cartridge, comprising a tube; and multiple hollow fibre membranes potted into the tube, said tube being fitted with ports, and the hollow fibre membranes having a pore size sufficient to allow passage of blood plasma through the hollow fibre membranes, wherein the hollow fibre membranes comprise the separating material of claim 40.

72. (New) The separating material of claim 43, wherein the solid substrate is a membrane, said membrane comprising a hollow fibre.

73. (New) The separating material of claim 45, wherein the solid substrate comprises blends or copolymers of said compounds.

74. (New) The separating material of claim 73, wherein the blends or copolymers of said compounds further comprise hydrophilizing polymers.

75. (New) The separating material of claim 74, wherein the hydrophilizing polymer comprises polyvinylpyrollidone (PVP), or polyethyleneoxide (PEO).

76. (New) The method of claim 56, wherein the solid substrate is a membrane, said membrane comprising a hollow fibre.

77. (New) The method of claim 58, wherein the solid substrate comprises blends or copolymers of said materials.

78. (New) The method of claim 77, wherein the blends or copolymers of said materials further comprise hydrophilizing polymers.

79. (New) The method of claim 78, wherein the hydrophilizing polymer comprises polyvinylpyrollidone (PVP), or polyethyleneoxide (PEO).

80. (New) A method for producing a separating material comprising the step of:

contacting the substrate surface of a solid substrate having a substrate surface, wherein primary or secondary amines are coupled to the substrate surface and a thermally labile radical initiator is covalently coupled to the primary or secondary amines,

with a solution of one or more polymerizable monomers, wherein thermally initiated graft copolymerization of the monomers forms a structure including adjacent functional polymer chains on the substrate surface.

81. (New) The method of claim 80, wherein the solid substrate is a porous polymeric material having a pore size sufficiently large to allow passage of blood, blood plasma, or blood serum through the solid substrate.

82. (New) The method of claim 80, wherein the solid substrate is selected from the group consisting of: a membrane, a particle bed, a fibre mat, and beads.

83. (New) The method of claim 82, wherein the solid substrate is a membrane, said membrane comprising a hollow fibre.

84. (New) The method of claim 80, wherein the solid substrate comprises a biocompatible material.

85. (New) The method of claim 80, wherein the solid substrate comprises a material selected from the group consisting of polyacrylates, polystyrene, polyethylene oxide, cellulose, cellulose derivatives, polyethersulfone (PES), polypropylene (PP), polysulfone (PSU), polymethylmethacrylate (PMMA), polycarbonate (PC), polyacrylonitrile (PAN), polyamide (PA), polytetrafluorethylene (PTFE), cellulose acetate (CA), regenerated cellulose, and blends or copolymers of the foregoing, or blends or copolymers with hydrophilizing polymers.

86. (New) The method of claim 85, wherein the solid substrate comprises blends or copolymers of said materials.

87. (New) The method of claim 86, wherein the blends or copolymers of said materials further comprise hydrophilizing polymers.

88. (New) The method of claim 87, wherein the hydrophilizing polymer comprises polyvinylpyrollidone (PVP), or polyethyleneoxide (PEO).

89. (New) The method of claim 80, wherein the amino-functional groups are primary amino groups.

90. (New) The method of claim 80, wherein the thermally labile radical initiator comprises at least one carboxylic group.

91. (New) The method of claim 80, wherein the thermally labile radical initiator comprises compounds which decompose to give free radicals upon thermal activation selected from the group consisting of azo compounds and peroxides.

92. (New) The method of claim 80, wherein the thermally labile radical initiator is 4,4'-azobis-(4-cyanovaleric acid) or 2,2'-azobis-[N-(2-carboxyethyl)-2-methylpropionamide].

93. (New) The method of claim 80, wherein the one or more polymerizable monomers are selected from compounds having a polymerizable double bond.

94. (New) The method of claim 80, wherein the one or more polymerizable monomers are selected from the group consisting of:

acrylic acid, methacrylic acid, vinyl compounds, derivatives of acrylic acid, methacrylic acid and vinyl compounds, N,N-Dimethylaminoethyl acrylamide, N,N-Diethylaminoethyl acrylamide, N,N-Dimethylaminopropyl acrylamide (DMPA), N,N-Dimethylaminopropyl methacrylamide, N,N-Dimethylaminoethyl methacrylate, N,N-Diethylaminoethyl methacrylate, N,N-Dimethylaminoethyl acrylate, N-Morpholinoethyl acrylate, N-Morpholinoethyl methacrylate, 1-Vinylimidazole, Trimethylammoniumethyl acrylamide, Trimethylammoniumpropyl methacrylamide, Trimethylammoniumethyl methacrylate, Glycidyl acrylate, Glycidyl methacrylate, Vinyl glycidyl ether, Vinyl glycidyl urethane, 2-Hydroxyethyl methacrylate, 2-Hydroxypropyl methacrylate, Hydroxymethyl methacrylate, N-Vinylpyrrolidone, 2-Vinyl pyridine, 4-Vinyl pyridine, and N-Vinyl-2-methylimidazole.

95. (New) The method of claim 80, wherein the one or more polymerizable monomers comprise Dimethylaminopropyl acrylamide (DMPA).

96. (New) The method of claim 80, wherein the one or more polymerizable monomers are selected from compounds of the following formula:

$$H_2C=C(R^1)\text{-}C(O)\text{-}X\text{-}R^2\text{-}N(R^3)_2,$$

wherein R^1 is hydrogen, methyl or ethyl group; R^2 is a C_1-C_6-alkyl or aryl group; R^3 is a methyl or ethyl group; and X is NH or O.